

FE 163

Diagram No.1222-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey ... Field Examination
Field No. S.P. 4-58
Office No. FE-163

LOCALITY

State Virginia
General Locality ... Norfolk
Locality C. & G.S. Ship Base

1958

CHIEF OF PARTY
M.E. Wennermark

LIBRARY & ARCHIVES

DATE August 4, 1958

☆ U.S. GOV. PRINTING OFFICE: 1976-669-441

NOTE: A new system for registerin Field Examinations (FE's) was established in 1980. All FE's are now consecutively numbered as shown hereon. The date shown in the new format is the actual date of survey. This material was previously registered as;

FE. No.3 1958

FE 163

F E No. 3
1958

FE-163

Diag. Cht. No. 1222-3.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. S.P. 4-58 Office No. F.E.No. 3
(1958)

LOCALITY

State Virginia

General locality Norfolk

Locality C. & G. S. Ship Base

19 58

CHIEF OF PARTY

M.E. Wennermark

LIBRARY & ARCHIVES

DATE August 4, 1958

COMM-DC 61300

F E No. 3
1958

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. F.E.No.3, 1958

Field No. Special Survey 4-58

State Virginia

General locality Norfolk

Locality C. & G. S. Ship Base

Scale 1:1,200 Date of survey 10 - 13 June 1958

Instructions dated 29 May 1958

Vessel COWIE

Chief of party M. E. Wennermark

Surveyed by _____


Soundings taken by fathometer, graphic recorder, hand lead, wire _____

Fathograms scaled by _____

Fathograms checked by _____

Protracted by _____

Soundings penciled by _____

Soundings in ~~feet~~ and tenths
feet  at MLW ~~MLW~~ AND ARE TRUE DEPTHS

REMARKS: _____



150 YEARS OF SERVICE
1807 - 1957

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

Ship COWIE
102 West Olney Road
Norfolk 10, Va.

TO: THE DIRECTOR
Coast and Geodetic Survey
Washington 25, D. C.

SUBJECT: Report on SPECIAL SURVEY 4-58.

REFERENCE: Instructions dated 29 May 1958, 22/MEK, 5-2-GO.

AUTHORITY:

This survey was accomplished by authority of reference Instructions. ✓

DATE OF SURVEY:

The field work was done during the period 10 - 13 June 1958. ✓

LIMITS:

The area surveyed was the vicinity of the U. S. Government Navy Landing, foot of York Street, Norfolk, Virginia. Hydrography extends from the Navy Landing to approximately York Street extended on the north, the Atlantic Warehouse docks on the west, the 20 foot curve on the southwest, and the Norfolk Boat Club Pier and the moored oil barge on the south. ✓

CONTROL:

Existing control was established by the U. S. Corps of Engineers and plotted on the Norfolk District Engineers Harbor Line Drawing C3-1-6-895. Triangulation was established in 1947 and topography in 1951. The order of accuracy of the triangulation was not indicated. It was assumed to be of third or fourth order accuracy by C & G S standards. ✓

Four triangulation stations were recovered and recovery established by occupying station HAB 1947 and observing the directions to stations ARCH 1947, station HSC-1, 1947, and station AWC 1947. The direction to HSC-1 failed to check the C. E. value by 18". The direction to AWC had not been previously observed. It was checked graphically on the sheet blowup and failed to check by 6' of arc (1.12 ft). ✓

CONTROL EXTENDED:

Hydrography control stations (designated alphabetically and indicated in blue on the smooth sheet) were established at 25 foot intervals by tape traverse along the west and south faces of the wharf with "A", the initial station, at the southwest corner. Traverse alignment was maintained with a WILD T-2.

The control stations were used as front range locations to control the line spacing for the hydrography. The instrument was then set up successively on each station and rear range locations established from 30 feet to 50 feet distant as space permitted. The azimuths for the sounding lines were pre-determined graphically from the C. E. drawing.

The sounding line "A" to station AWC established the azimuth for the hydrography off the west face. Sounding lines off the south face of the wharf were run normal to the wharf. Additional lines were "fanned" around "A" as a front range to cover the southwest approach. A similar procedure was used at "H" and "I".

SURVEY EQUIPMENT AND METHODS:

The hydrography was done by a three man crew from a 16 foot aluminum skiff powered by a 10 HP outboard motor. Soundings were obtained with a standard leadline. The sounding interval was controlled by the tag-line method.

The tag-line consisted of seven 100 foot sections of 3/16" steel cable. It was buoyed at each section and marked at 25 foot intervals with colored bunting. The cable was manually wound on a portable steel drum and controlled from the wharf. The drum was placed near the front range for each sounding line.

The zero end of the cable was passed over an A frame amidships in the skiff and secured to the forward thwart, abeam of the leadsman. This assembly permitted complete maneuverability of the skiff.

The cable was paid out from the drum in 25 foot intervals, the initial point for each sounding line being the face of the wharf. As the tag-line was checked at each interval the skiff operator took up the slack, maneuvered onto the range for the sounding. Lines were run in either direction with equal facility.

TIDE STATION:

The standard tide gage in operation at the U. S. Government Navy Landing was used for the reduction of soundings. The tide staff was read half hourly during the progress of the hydrography. The value of MLW (1.6) on the staff was used for the reduction of soundings. This value differed by 1/10 foot from the value furnished by the Washington Office (1.5). The Office value was not available at the time the smooth sheet was processed. The pencilled soundings have not been corrected for this small discrepancy.

*0.1 ft deducted from pencilled sdgs on 5/5.
before inking. 1m2*

MISCELLANEOUS:

Traverse and hydrographic data were recorded in a Sounding Record, Form 275. A boat sheet was not used.

Soundings were read and recorded in feet and tenths at 25 foot intervals.

Each sounding line was identified by the control station designation and direction from a reference station.

ADEQUACY OF SURVEY:

This survey is considered complete and adequate and should supercede all prior surveys.

COMPARISON WITH EXISTING CHARTS:

Comparison with Chart 452 (Scale 1:20,000) the largest scale chart for that area shows good agreement.

PROCESSING:

The smooth sheet projection was made by personnel of the Norfolk Processing Office.

Topography was transferred from the Norfolk District Engineers Harbor Line Drawing C3-1-6-895. Changes in topography are indicated in red on the smooth sheet.


Sounding lines were plotted and soundings pencilled by Ensign William A. Hughes.

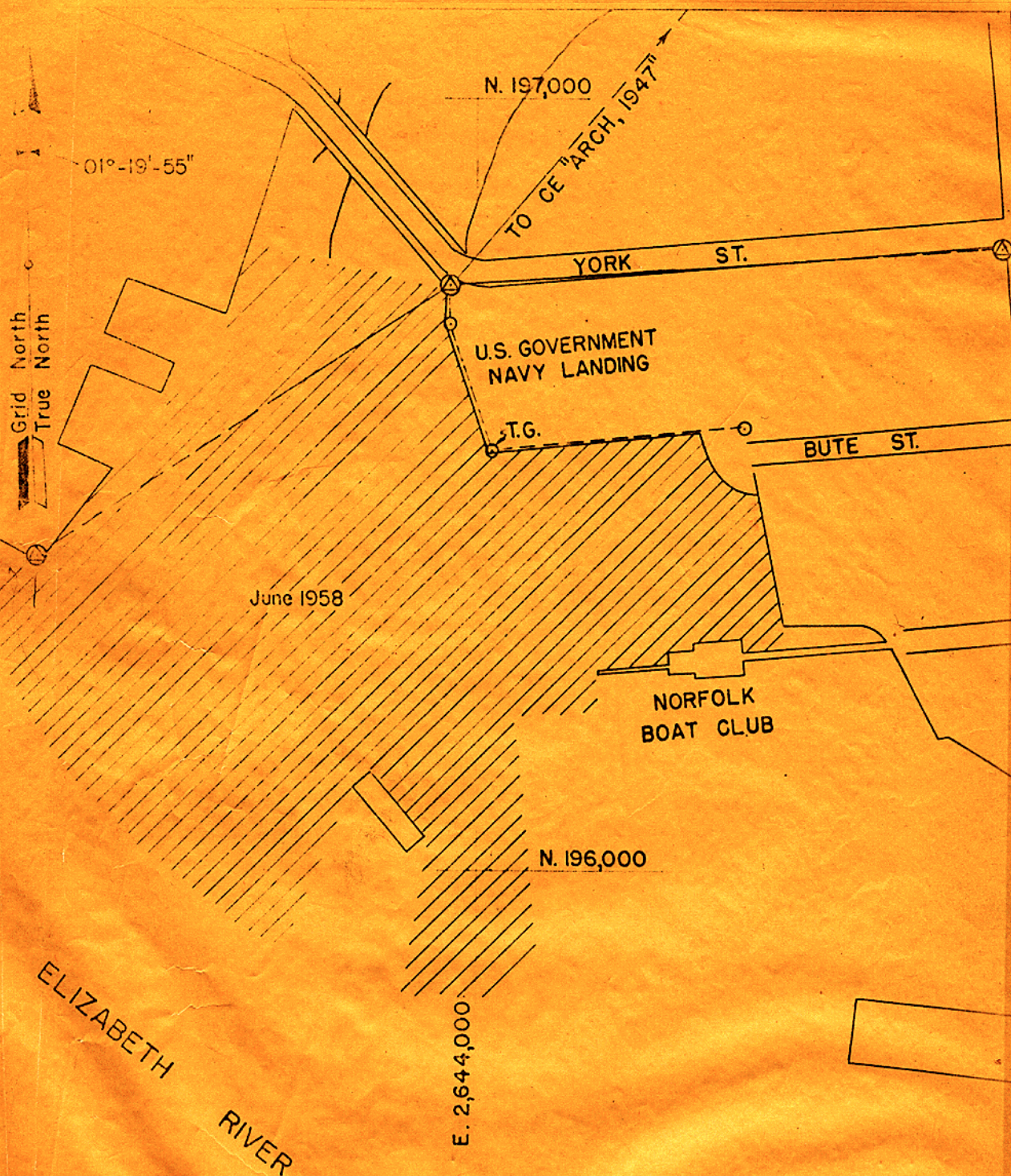
Soundings were plotted to the nearest 1/10 foot.

Depth curves were drawn by personnel of the Norfolk Processing Office.

TABULATION OF APPLICABLE DATA:

	Smooth Sheet
1	- Sounding Volume
1	- Horizontal Directions
1	- List of Directions
1	- Abstract of Directions
	Tidal data used in reduction of soundings


M. E. Wennermark
CDR., C&GS.
OinC Ship COWIE



PROGRESS SKETCH TO ACCOMPANY
ANNUAL REPORT

FY 1958

COMBINED OPERATIONS, SPECIAL SURVEY 4-58
NAVY LANDING - YORK STREET

NORFOLK, VA.

U.S.C.&G.S. SHIP COWIE

M.E. WENNERMARK, COMDG.

DATES OF FIELDWORK: 10 JUNE - 13 JUNE 1958

U.S.E. DRAWING NO. C3-1-6-895

SCALE: 1" = 200'

LEGEND

TRAVERSE: ○ — — — ○

TIDE STAFF READINGS

U. S. GOVERNMENT NAVY LANDING

NORFOLK, VIRGINIA

11 JUNE 1958

09:30	-	2.1	✓
10:00	-	1.9	✓
10:30	-	1.85	✓
11:00	-	2.05	✓
11:30	-	2.2	✓
12:00	-	2.35	✓
12:30	-	2.6	✓
13:00	-	2.85	✓
13:30	-	3.1	✓
14:00	-	3.4	✓
14:30	-	3.7	✓
15:00	-	4.0	✓
15:30	-	4.3	✓

12 JUNE 1958

09:30	-	2.5	✓
10:00	-	2.3	✓
10:30	-	2.2	✓
11:00	-	2.15	✓
11:30	-	2.15	✓
12:00	-	2.2	✓
12:30	-	2.3	✓
13:00	-	2.4	✓
13:30	-	2.65	✓
14:00	-	2.9	✓
14:30	-	3.2	✓
15:15	-	3.7	✓
15:30	-	3.8	✓
16:00	-	4.05	✓

13 JUNE 1958

09:00	-	2.95	✓
09:30	-	2.65	✓
10:00	-	2.45	✓
10:45	-	2.15	✓
11:00	-	2.10	✓
11:30	-	2.00	✓
12:00	-	1.90	✓
12:30	-	1.85	✓
13:08	-	2.00	✓
13:30	-	2.15	✓
14:00	-	2.35	✓
14:30	-	2.60	✓

HALF-HOURLY HEIGHTS FOR SPECIAL PROJECT 4-58

HALF-HOURLY HEIGHTS FOR SPECIAL PROJECT 1-56									
11 JUNE			REDUCED TO MLW = 1.6				13 JUNE		
Time	Staff Reading	Corrected Reading		Time	Staff Reading	Corrected Reading	Time	Staff Reading	Corrected Reading
0930	2.1	+0.5			2.5	+0.9	0900	2.95	+1.35
1000	1.9	+0.3			2.3	+0.7	0930	2.65	+1.05
							1000	2.45	+0.85
1030	1.85	+0.25			2.2	+0.6			
1100	2.05	+0.45			2.15	+0.55	1045	2.15	+0.85
								2.10	+0.5
1130	2.2	+0.6			2.15	+0.55		2.0	+0.4
1200	2.35	+0.75			2.2	+0.6		1.9	+0.3
1230	2.6	+1.0			2.3	+0.7		1.85	+0.25
1300	2.85	+1.25			2.4	+0.8		2.00	+0.4
1330	3.1	+1.5			2.65	+1.05		2.15	+0.55
						+0.8			
1400	3.4	+1.8			2.9	+1.3		2.35	+0.75
1430	3.7	2.1 +2.8			3.2	+1.6		2.60	+1.00
1500	4.0	2.4			3.7				
				1515	3.7	+2.1			
1530	4.3	2.7			3.8	+2.2			
1600					4.05	+2.45			

Compiled - WAH
RDL

~~SMOOTH TIDE CURVES FOR SPECIAL PROJECT 4 38~~

TIDE CORRECTIONS.

11 JUNE

12 JUNE

TIME	CORR.	TIME	CORR.
0930 - 1000	- 0.4	0930 - 1000	- 0.8
1000 - 1045	- 0.2	1000 - 1230	- 0.6
1045 - 1122	- 0.4	1230 - 1308	- 0.8
1122 - 1150	- 0.6	1308 - 1336	- 1.0
1150 - 1216	- 0.8	1336 - 1400	- 1.2
1216 - 1242	- 1.0	1400 - 1420	- 1.4
1242 - 1306	- 1.2	1420 - 1438	- 1.6
1306 - 1330	- 1.4	1438 - 1454	- 1.8
1330 - 1347	- 1.6	1454 - 1515	- 2.0
1347 - 1407	- 1.8	1515 - 1537	- 2.2
1407 - 1428	- 2.0	1537 - 1600	- 2.4
1428 - 1445	- 2.2		
1445 - 1508	- 2.4		
1508 - 1530	- 2.6		

13 JUNE

0900 - 0904	- 1.4
0904 - 0925	- 1.2
0925 - 0952	- 1.0
0952 - 1023	- 0.8
1023 - 1100	- 0.6
1100 - 1317	- 0.4
1317 - 1348	- 0.6
1348 - 1415	- 0.8
1415 - 1430	- 1.0

Compiled - WAH
RDL

LIST OF DIRECTIONS

Station CE HAB 1947 State Virginia

Chief of party M.E. Wennermark Date 6/30/58

Computed by C.D.U.

Observer C.D. Upham Instrument Wild # 35052

Checked by W.A.H.

U. S. GOVERNMENT PRINTING OFFICE: 1933 11-2503

OBSERVED STATION	Observed direction			Eccentric reduction		Sea level reduction*	Corrected direction with zero initial			Adjusted direction*	
	°	'	"	'	"		°	'	"	'	"
CE ARCH 1947	0	00	00.00				0	00	00.00		
CE. AWC 1947				196	41	32.04					
CE. HSC-1 1947				45	27	10.11					

* These columns are for office use and should be left blank in the field.

Station: Ken

Chief of party: C. V. H.

Observer: C. V. H.

State: Maryland

Date: 1917

Instrument: No. 168

Computed by: O. P. S.

Checked by: W. F. R.

OBSERVED STATION	Observed direction	Eccentric reduction	Sea level reduction	Corrected direction with zero initial	Adjusted direction
	° ' "	' "	"	° ' "	' "
Chevy	0 00 00.00	- 7.31		0 00 00.00	
Tank west of Δ Dulce	29 03 37.0	-1 09.8		29 02 34.5	
Ken (center), 3.469 meters	178 42				
Forest Glen standpipe	313 24 53.0	+3 01.2		313 28 01.5	
Home	326 31 30.21	+ 31.93		326 32 09.45	
Bureau of Standards, wireless pole	352 17 20.8	+ 5.7		352 17 33.8	
Reno	357 28 48.63	- 1.16		357 28 54.78	
Reference mark, 16.32 m	358 31 20				

Ken eccentric
To Home
149° 50'
3.469 m
Ken

This form, with the first three and fifth columns properly filled out and checked, must be furnished by field parties. *To be acceptable it must contain every direction observed at the station.*

It should be used for observations with both repeating and direction theodolites.

The directions at only one station should be placed on a page.

If a repeating theodolite is used, do not abstract the angles in tertiary triangulation. The local adjustment corrections (to close horizon only) are to be written in the Horizontal Angle Record, and the List of Directions is to be made from that record directly.

Choose as an initial for Form 24A some station involved in the local adjustment, and preferably one which has been used as an initial for a round of directions on objects not in the main scheme. Use but one initial at a station. Call the direction of the initial 0° 00' 00." 00, and by applying the corrected angles to this, fill in opposite each station its direction reckoned *clockwise* around the whole circumference regardless of the direction of graduation of the instrument. The clockwise reckoning is necessary for uniformity and to make the directions comparable with azimuths.

If a station has been occupied eccentrically, reduce to the center and enter in this form, in ink, the resulting corrections to the observed directions in the column provided for them. If an eccentric reduction is necessary, but not made in the field, leave the column blank. If the station was occupied centrally, and no eccentric reduction is required, put dashes in the column to show that no corrections are necessary.

Directions in the main scheme should be entered to hundredths of seconds in first-order triangulation; otherwise to tenths only. Points observed upon but once, direct and reverse, should be carried to tenths in first-order and second-order triangulation, and to even seconds only in third-order triangulation. In general, but two uncertain figures should be given.

It is recommended that the following simple plan of observing be used with a repeating instrument: Measure each single angle in the scheme at each station and the outside angle necessary to close the horizon. *Measure no sum angles.* Follow each measurement of every angle immediately by a measurement of its complement. Six repetitions are to constitute a measurement. The local adjustment will consist simply of the distribution of the error of closure of the horizon.

FORM 470
(3-1-55)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

STATE

Virginia

ABSTRACT OF DIRECTIONS

STATION
CE HAB 1947

COMPUTED BY
C.D. Upham

DATE
6/30/58

OBSERVER
C.D. Upham

CHECKED BY
W.R. Hughes

INSTRUMENT NO.
Wild # 35052

POSITION NO.	STATIONS OBSERVED							
	CE ARCH 1947	CE AWL 1947						
	(INITIAL) 0° 00'	0 1	0 1	0 1	0 1	0 1	0 1	0 1
	"	"	"	"	"	"	"	"
1	0.00	32.2 ✓						
2	0.00	30.0 } 30.6 ✓ 31.2 }						
3	0.00	33.2 (23.7) R ✓						
4	0.00							
5	0.00							
6	0.00							
7	0.00							
8	0.00							
9	0.00							
10	0.00							
11	0.00							
12	0.00							
13	0.00							
14	0.00							
15	0.00							
16	0.00							
SUM,		3) 96.0						
MEAN,		32.0						
COR. FOR ECC.,								
DIRECTION,								

W.D.A.H.

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

22 October 1958

Plane of reference approved in
1 volume of sounding records for

HYDROGRAPHIC SHEET FE No. 3 1958

Locality Elizabeth River, Norfolk, Va.

Chief of Party:

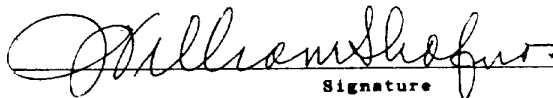
Plane of reference is mean low water

ft. on tide staff at

ft. below B.M.

Height of mean high water above plane of reference is 2.8 feet.

Condition of records satisfactory except as noted below:


Signature

Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. **F.E.No.3**
(1958)

Name on Survey	<div>On Chart No.</div> <div>On previous survey No.</div> <div>On U. S. quadrangle Maps</div> <div>From local information</div> <div>On local Maps</div> <div>P. O. Guide or Map</div> <div>Rand McNally Atlas</div> <div>U. S. Light List</div>
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Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. F.E.No. 3 (1958)

Records accompanying survey:

Boat sheets; sounding vols. 1...; wire drag vols.;
bomb vols.; graphic recorder rolls;
special reports, etc. 1-Smooth sheet and 1-Descriptive report.
Horizontal Directions forward to Geodesy.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	.....	90
Number of positions checked	.....	5
Number of positions revised	.....	0
Number of soundings revised (refers to depth only)	.....	*
Number of soundings erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	2
Junctions	Time	0
Verification of soundings from graphic record	Time	0
Verification by <i>Ju. Zeskund</i>	Total time	21
	Date	8-15-61
Reviewed by <i>Ju. Zeskund</i>	Time	5
	Date	8-16-61

FIELD EXAMINATION NO. 3, 1958

Virginia
Norfolk
C. and G. S. Ship Base

1. The field examination was made in compliance with Instructions for Special Survey 4-58, dated May 29, 1958.
2. The purpose of the examination was to make a tag-line survey of the C. & G. S. ship base located at the Navy Landing at the foot of York St. in Norfolk, Va. The area to be surveyed was outlined on a drawing submitted with the Instructions. The survey was to extend from the Navy Landing towards the ship channel to maximum depths of 20 ft.
3. The results of the examination are shown on the accompanying section of smooth sheet.
4. Two soundings from the field examination have been applied to Chart 452, dated June 19, 1961. (See FE-1, 1961 for comparison of FE-3, 1958 and FE-1, 1961 with the above-mentioned chart.)
5. The Descriptive Report adequately covers all matters pertaining to this examination. No further discussion is considered necessary.

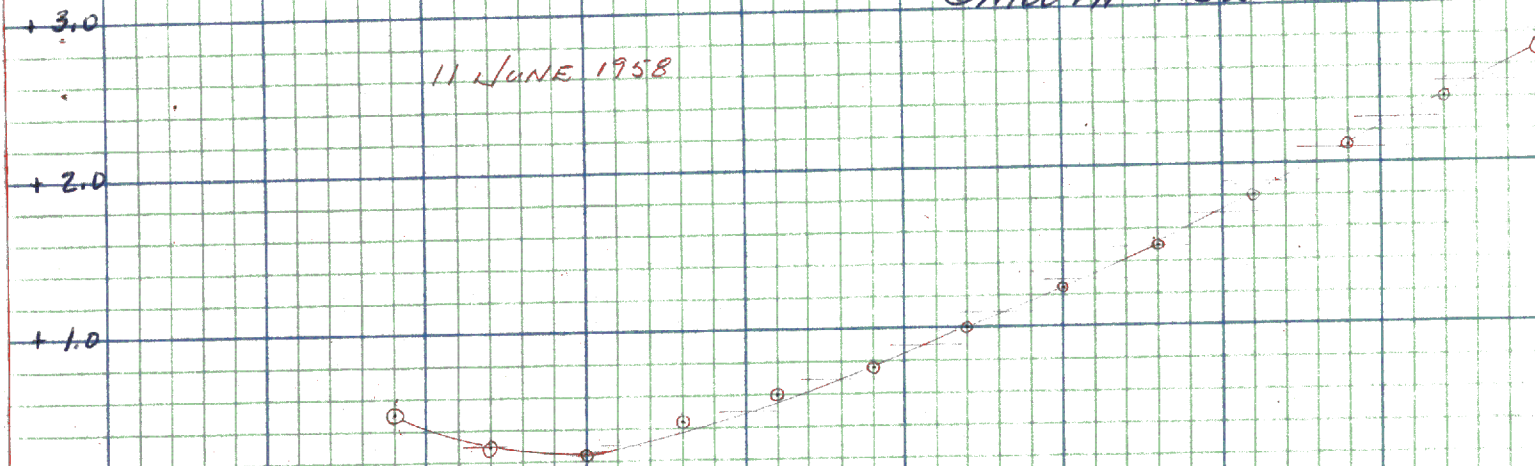
Reviewed by I. M. Zeskind
8-16-61

Inspected by R. H. Carstens

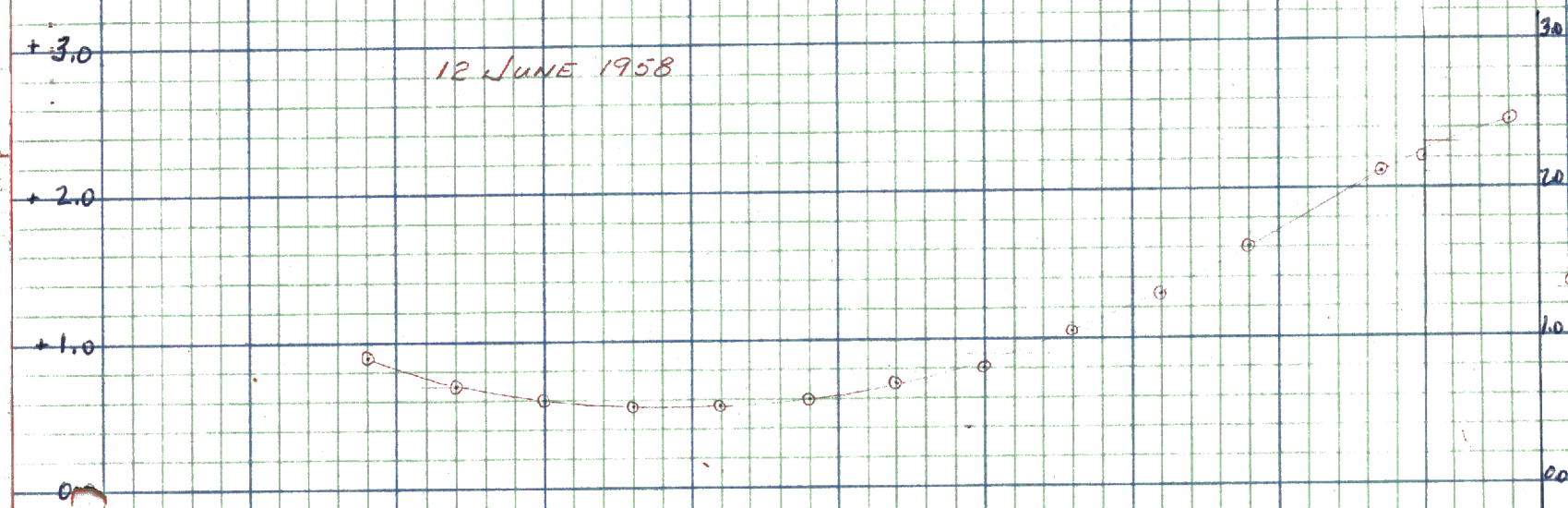
SMOOTH TIDE CURVES FOR SPECIAL PROJECT 4-58

11 thru 13 JUNE 1958

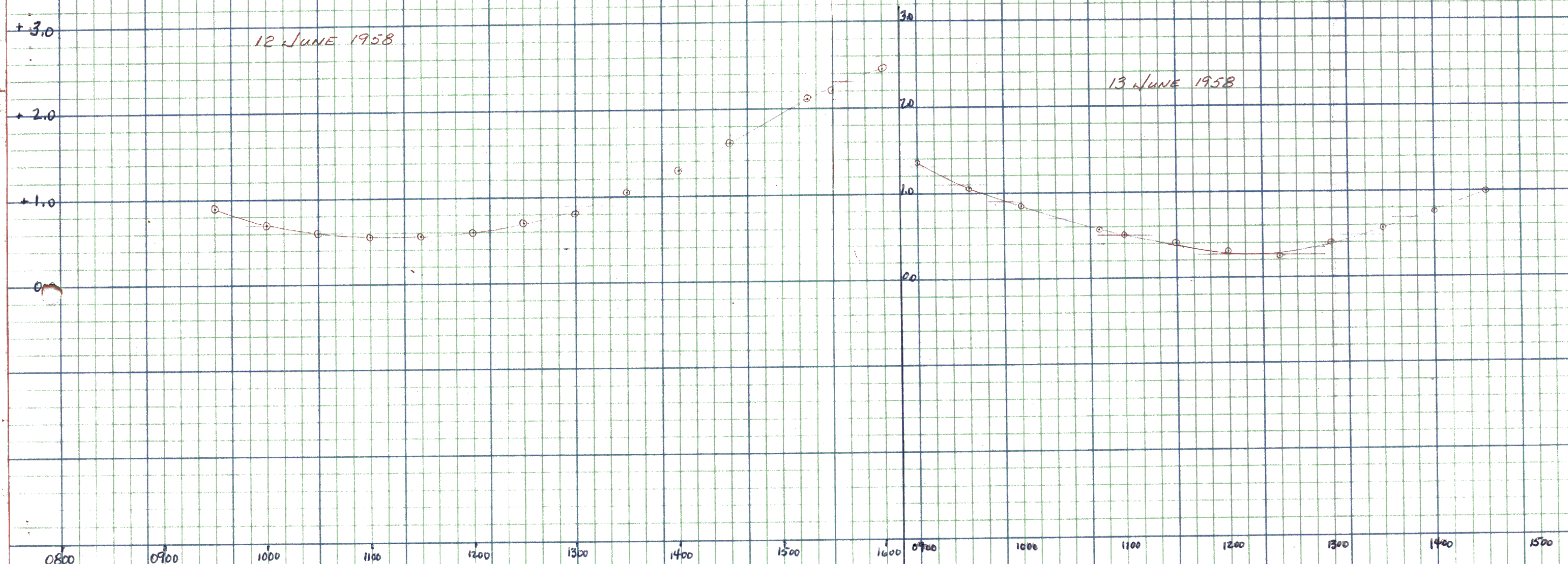
11 JUNE 1958



12 JUNE 1958



13 JUNE 1958



197,000

197,000

2,643,000

2,644,500

196,500

196,000

ELIZABETH
RIVER

CE AWC, 1947

CE HAB, 1947

U.S. GOVERNMENT NAVY LANDING

10⁰ landing floats secured to pilings

all soundings taken at bulkhead

NORFOLK BOAT CLUB

moored fuel barge

FIELD EXAMINATION No.3, 1958

VIRGINIA

NORFOLK

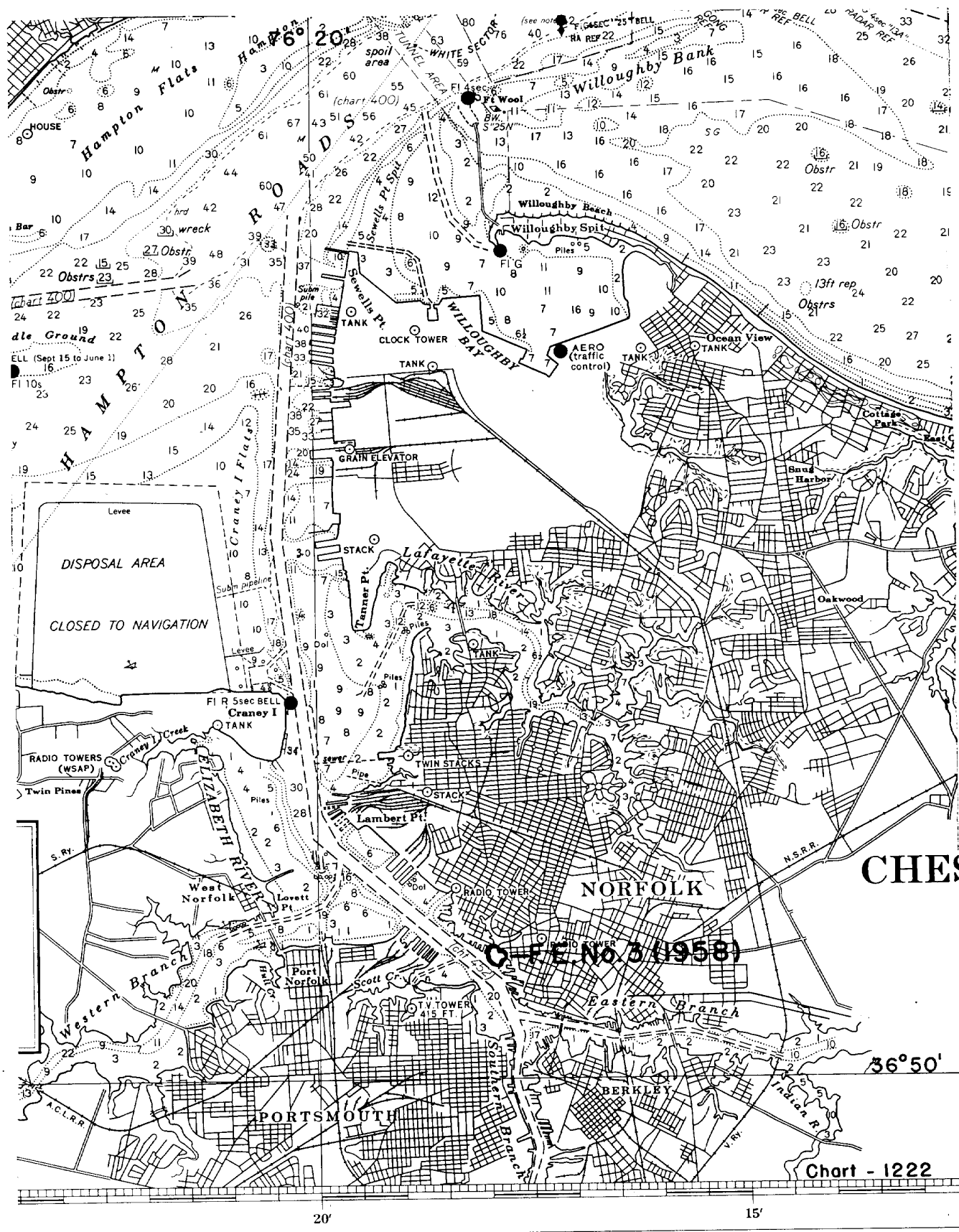
C. & G. S. SHIP BASE

Date of Survey June 1958

Scale 1:1200

Chief of Party M. E. Wennermark

Sounding at Mean Low Water in Feet and Tenths
and are true depths



NAUTICAL CHARTS BRANCH

SURVEY NO. F.E.No. 3 - 1958

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.